

Editorial Commentary: What You See Is What You Get—Is In-Office Needle Arthroscopy Ready for Prime Time?



Louis F. McIntyre, M.D.

Abstract: In-office needle arthroscopy (IONA) has been around for many years, and technological improvements in image fidelity, patient convenience and access to care, and medical economics have resulted in renewed interest in this diagnostic tool. Patients could be well served by an immediate diagnosis of their joint pathology at the initial office encounter. A limitation of the current literature is that for research purposes, studies comparing IONA with diagnostic surgical arthroscopy and/or magnetic resonance imaging have been performed in the operating room—not the office setting. In addition, IONA is limited to intra-articular evaluation. IONA has been shown to be accurate and cost-effective, and future adoption of this modality seems promising.

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Those of us of a certain age will remember the comic Flip Wilson and his prime-time television variety show from the early seventies. All who are not approaching or at Medicare eligibility are encouraged to just get on YouTube and enjoy. Wilson was a great mime and had a cast of outrageous characters he played on the show. Perhaps his most famous character was the sassy Geraldine, who Wilson played in drag. Her favorite saying was, “What you see is what you get!” This was always relayed with the not-so-subtle warning that her boyfriend, “Killer,” was nearby to ensure that you would neither see nor get.

What are we seeing and getting with in-office needle arthroscopy (IONA)? This technological platform, a small-bore semi-rigid fiberoptic lens and camera suitable for use under a local anesthetic in the office setting, has been around for 25 years in at least 4 different iterations. For reasons related to technological improvements in image fidelity, costs associated with other diagnostic modalities, and the economic realities of the

orthopaedic office, there is renewed interest in this diagnostic tool. Zhang, Crum, Samuelsson, Cadet, Ayeni, and de Sa¹ contribute to the growing body of literature on IONA in their article “In-Office Needle Arthroscopy: A Systematic Review of Indications and Clinical Utility” in this issue of *Arthroscopy*.

The article draws from a potential field of 932 conference abstracts and 369 studies and distills its analysis to 11 studies, 3 of which are abstracts only and 1 of which is a case report, illustrating the limited evidence there is concerning IONA in the literature.¹ In addition, the studies used to assess the accuracy of IONA compared with diagnostic surgical arthroscopy (SA) and magnetic resonance imaging (MRI) were performed in the more controlled environment of the operating room and not the office setting. Although 1 of the articles cited contends that “the exact location would not affect the images obtained or the actual patient or device assessment of the technology,” there is little evidence to date that the accuracy of IONA performed in the office setting is the same when performed in the operating room prior to an SA.² The review supports the contention that when performed in the operating room, IONA has similar diagnostic accuracy to SA and has superior sensitivity and specificity, as well as superior positive predictive and negative predictive values, to MRI in the evaluation of knee osteoarthritis, anterior cruciate ligament insufficiency, and meniscal tears. IONA is comparable or inferior to MRI regarding

Sleepy Hollow, New York

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the same parameters for the diagnosis of osteochondral defects and rotator cuff tears. In 2 cost analyses, IONA had lower costs when used in place of MRI for treatment algorithms involving medial meniscal tears and rotator cuff tears but not lateral meniscal tears. The more recent cost analysis by Zhang et al.¹ concurs with a Markov decision tree model published earlier in 2019, but in that study, IONA was also less costly for lateral meniscal tears.³ Zhang et al. rightly point out that IONA is an intra-articular modality only and cannot diagnose concomitant extra-articular soft-tissue damage or important subchondral bone changes in osteochondral lesions. In addition, they point out that IONA is not indicated in the setting of acute knee injury and hemarthrosis. The favorable safety profile of IONA across all the studies is also documented.

Why then the renewed interest with such limitations? The reasons have to do with patient convenience, access to care, and medical economics.

Many patients might be better served by an immediate assessment of their joint problem at the initial office encounter without the intervening time and expense of diagnostic imaging procedures that need precertification and scheduling, which prolong the time to treatment and add cost, both in dollars and lost opportunity.⁴ The favorable cost comparison of IONA to MRI bolsters this argument. Many orthopaedic offices have added MRI as an ancillary service that can increase patient convenience and access to services. This has also allowed an additional revenue stream for orthopaedic surgeons in an era of decreasing reimbursements, which promotes the health of the private practice setting and patient access to orthopaedic services.⁵ Costs associated with freestanding MRI in the orthopaedic office are also considerably lower than costs of those imaging procedures in the hospital setting, decreasing overall health care expenditures.

Recently, however, reimbursements for MRI in the freestanding office setting have fallen to the point where the overall costs of obtaining the image are barely covered.⁶ This downward trend is likely to continue. At some point in the near future, it may not be economically feasible to undergo an MRI scan in the orthopaedic office. That will leave patients with fewer and much more expensive choices for their imaging needs. IONA may be able to satisfy some of these needs with a more accurate and less costly modality. What's not to like about that? Issues of patient selection, need for assessment of extra-articular and subchondral pathology, and barriers to adoption will limit this, but overall, IONA has considerable promise. Studies that document IONA's safety and accuracy in the office

setting with actual cost analysis compared with MRI where appropriate should be welcomed and promoted. IONA may have special indications as an adjunct to MRI and physical examination prior to procedures such as osteochondral allograft implantation in which MRI alone tends to undersize the extent of cartilage lesions. Its application in the postoperative and revision situation is also promising.

There are concerns with IONA and the scope of practice that also complicate its acceptance by organized orthopaedics. Safety and efficacy issues surrounding the use of IONA by practitioners other than orthopaedic surgeons are generally acknowledged in orthopaedics as a contraindication to use, but policing this type of scope limitation is exceedingly difficult. This concern needs to be brought to the attention of industry to develop strategies to make sure that the experts in musculoskeletal care, orthopaedic surgeons, are the practitioners performing IONA.

Finally, the first paragraph of the introduction in the article by Zhang et al.¹ contains some very interesting and troubling data concerning waiting times in Ontario, Canada, for knee arthroscopy (155-216 days), shoulder surgery (187-248), and MRI (35-96 days). Those time frames should be kept in mind this election season as the benefits of a single-payer health care system are touted by various politicians!

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